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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/869,590	10/15/2001	Patrick Agnese	209892US2PCT	5899
22850	7590	08/01/2005	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			HU, SHOUXIANG	
			ART UNIT	PAPER NUMBER
			2811	

DATE MAILED: 08/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/869,590

Applicant(s)

AGNESE, PATRICK

Examiner

Shouxiang Hu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-18 is/are rejected.
- 7) ☒ Claim(s) 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 12-19 are objected to because of the following informalities and/or defects:

Claim 12 recites the subject matter of “measuring the rise in temperature”, but fails to clarify where the temperature is measured.

In addition, claim 12 recites the subject matter of “electrically insulated from the load resistance of the antenna”; but it is not clear how a resistance, rather than a resistor or a resistance load, could be electrically insulated from the recited thermometric component, as even a thin insulating film can still have a measurable resistance.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 12 and 16, as being best understood in view of the claim objections above, are rejected under 35 U.S.C. 102(b) as being anticipated by Cole (US 5,286,976).

Cole discloses a bolometric detector (Fig. 1), comprising: IR absorber coating (23) formed of a thin metal layer (col. 1, lines 59-61) which is naturally conductive with non-zero sheet resistance, thus such a thin metal film (23) can inherently function as a receiving antenna having a load resistance due to the non-zero sheet resistance, a resistance load formed from the load resistance, which naturally converts EM wave power into heating power; and, a thermometric component (21; also see claim 1) electrically insulated from the antenna (23) by an insulating layer (22) and for measuring a temperature rise in the vicinity of antenna, which is naturally measured relatively to a reference temperature.

Regarding claim 16, the detector in Cole is intended for imaging application (see col. 1, lines 18-26).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 13-15, 17 and 18, as being best understood in view of the claim objects above, are rejected under 35 U.S.C. 103(a) as being unpatentable over Cole in view of Koeder (DE 3333410A1) and/or Jack (US 6,329,655).

The disclosure of Cole is discussed as applied to claims 12 and 16 above.

Although Cole does not expressly disclose that the thermometric component can be formed of a diode over a cavity, and/or that the antenna can comprise two crossed pairs of antenna components. However, one of ordinary skill in the art would readily recognize that each of these features can be desirably formed in an EM wave detector/imager, as evidenced in Koeder and/or Jack. Koeder teaches to form an EM wave detector having a suspended thermometer formed of a diode (2) that naturally improves thermal detection sensitivity. And, Jack teaches to form an EM wave detector (Figs. 2A and 4) with two crossed pairs of antenna components (12) that can naturally receive EM waves of various polarizations including TE wave and TM waves depends on the polarization(s) of the incident EM waves.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the suspended diode thermometer of Koeder and/or the cross-paired antenna components of Jack into the detector of Cole, so that an EM wave detector/image with improved thermal detection sensitivity and improved capability to measuring more polarized EM waves would be obtained.

Regarding claim 14, the thermometer in Fig. 1 of Cole is formed on air-bridged structure; thus the resistive termination portion therein would be then naturally readable as an arm connecting each pair of the antenna components in the above collectively taught device. And, it is also noted that it is art known that the resistive termination can be readily formed from a thin metal film.

Regarding claim 15, the antenna can be commonly square-shaped in the art, as further evidenced in Fig. 2A of Jack. And, it is noted that the size of the antenna is an

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art-recognized parameter of importance subject to routine experimentation and optimization.

Regarding claim 17, it is art known that an imager can be formed with matrix having four or more identical detectors, which would naturally result in the diodes in the above collectively taught individual detectors to be arranged in parallel.

Regarding claim 18, the two cross-paired antenna components in the above collective taught detector/imager would naturally be able to detect a TE wave and a TM wave, provided that the incident EM waves contain the corresponding cross-polarized TE and TM waves.

Response to Arguments

6. Applicant's arguments with respect to the above rejected claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shouxiang Hu whose telephone number is 571-272-1654. The examiner can normally be reached on Monday through Thursday, 7:30 AM to 6:00 PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C. Lee can be reached on 571-272-1732. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SH

July 27, 2005

A handwritten signature in black ink, appearing to read 'Shouxiang Hu', written in a cursive style.

SHOUXIANG HU
PRIMARY EXAMINER